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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,156

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Gerd Hoffmann

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EXAMINER

CHANG, AUDREY Y

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,156	<b>Applicant(s)</b> HOFFMANN ET AL.	
	<b>Examiner</b> Audrey Y. Chang	<b>Art Unit</b> 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-23 is/are pending in the application.
- 4a) Of the above claim(s) 19-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-18 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/08, 3/08, 8/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Remark***

- This Office Action is in response to applicant's response/amendment filed on September 4, 2008, which has been entered into the file.
- By this amendment, the applicant has newly added claim 23.
- Claims 12-23 remain pending in this application.

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, (claims 12-18) in the reply filed on September 4, 2008 is acknowledged. The traversal is on the ground(s) that the non-elected method claims 19-22 are referred to production of substrate with three layers, with structural similar to the elected product claims. This is not found persuasive because the method although is referred to produce substrate with three layers, it does not yield the exact structure of the product as claimed. It can be used to produce ANY substrate with three layers where the three layers need not to be a Fabry-Perot filter. The layers needs not to be reflective and the intermediate layer needs not to be function as gap layer for a Fabry Perot filter as explicitly claimed in the product claim (claim 12). The restriction therefore is proper.

The requirement is still deemed proper and is therefore made FINAL.

2. The newly added claim 23 depends from claim 12, which is a product claim with product-by-process limitations. Claim 23 therefore is examined with the elected group I.
3. Claims 19-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on September 4, 2008.

### ***Claim Objections***

4. **Claim 23 is objected to because of the following informalities:**

(1). The phrase "the based material" and the phrase "the further material" recited in claim 23 are confusing it is not clear if they are the same "base material" and same "further material" as recited in claim 12 or not. The phrases "a substrate", "a first layer", "an intermediate layer" and "a second reflecting layer" recited in claim 23 are the same layers as recited in claim 12 or not. Furthermore, it is not clear if the first layer is reflecting layer or not since the first layer in claim 12 is a reflection layer for a Fabry Perot filter.

**Appropriate correction is required.**

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 12-14, 17 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Argoltia et al (PN. 6,777,085).**

Argoltia et al teaches an article having Fabry Perot filter coated on a substrate, wherein the article has a substrate (12, Figure 1A), a first reflecting layer (14), a spacer or intermediate layer (16) and a second reflecting layer (18, please see column 1, line 22, column 3, lines 45-52, and column 5, lines 44-50). Argoltia et al teaches that the first reflecting layer (14) and the second reflecting layer (18) have mutually reflecting facing surfaces that are apart by a gap with a thickness of d, wherein the intermediate or spacer layer is interposed in the gap as shown in Figure 1A. Argoltia et al further teaches that the first reflecting layer is comprised of a metal such as aluminum, serving as the base material, the spacer layer is comprised of aluminum oxide, which is a chemical compound of aluminum (base material) with oxygen (serves as the further material) and the second reflecting layer may also comprise of a semi-transparent

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aluminum layer, (please see column 5, lines 44-50). This means the first and second reflecting layers are comprised of same base material.

With regard to claims 13-14, Argoltia et al teaches that the first reflecting layer is comprised of a metal such as aluminum, serving as the base material, the spacer layer is comprised of aluminum oxide, which is a chemical compound of aluminum (base material) with oxygen (serves as the further material) and the second reflecting layer may also comprise of a semi-transparent aluminum layer, (please see column 5, lines 44-50).

With regard to claim 17, Argoltia et al teaches explicitly that the first reflecting layer is opaque and the second reflecting layer is semi-transparent, (please see column 5, lines 50-53 and 48).

With regard to claim 23, the product-by-process limitations are not given patentable weight for it does not differentiate the final product from the prior art, (please see MPEP 2173,05(p)). Furthermore, Argoltia et al does teach that the layers are deposited on the substrate by conventional deposition methods such as chemical vapor deposition (CVD), physical vapor deposition (PVD) and plasma-enhanced CVD, (please see column 8). These deposition methods essentially requires a vacuum coating facility with a vacuum chamber (113, Figures 2A, 2B and 2C). The vacuum chamber achieves vacuum condition by the vacuum pump system (120). The facility further comprises vaporization device that is charging with the base material via the plasma generator (114) to introduce the base material for deposition. It is implicitly true that the vacuum chamber has to be closed to generate the vacuum. The vaporization of the base material is implicitly included to vaporization deposition of the base material on the substrate. For the deposition of the aluminum oxide or the metal oxide it requires the simultaneous introduction of the further material such as oxygen into the chamber (via the gas distributor 135 and 134) to oxidize the aluminum to form the aluminum oxide, (please see columns 7-8). The deposition of the first reflecting layer, spacer layer and the second reflecting layer sequentially.

**This reference has therefore anticipated the claims.**

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Argoltia et al (PN. 6,777,085).**

The article having Fabry Perot filter coated on a substrate taught by Argoltia et al as described for claim 12 above has met all the limitations of the claim.

Argoltia et al teaches that the opaque aluminum or reflecting layer has a thickness of 50-80 nm, (please see column 5, line 11) and the spacer or intermediate layer has an optical thickness of about 2 to 8 quarter wavelengths, (please see column 5, lines 29-32) which has physical thickness of about 130-149nm. This reference however does not teach explicitly that the second reflecting layer of the semi-transparent aluminum is about 1 to 20 nm. However one skilled in the art must know that in order for the aluminum to be semi-transparent, it must have a thickness less than 40 nm and preferably between 5 to 40nm. It would then have been obvious to one skilled in the art to modify the second reflecting layer of semi-transparent aluminum layer to have a thickness be less than 20 nm to have good semi-transparent and semi-reflection properties.

**9. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Argoltia et al in view of the patent issued to Nelson (PN. 6,165,598).**

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The article having Fabry Perot filter coated on a substrate taught by Argoltia et al as described for claim 12 above has met all the limitations of the claim.

Argoltia et al teaches that the reflecting layers of the Fabry Perot filter are made of aluminum and the spacer or intermediate layer is made of aluminum oxide, but it does not teach that the intermediate layer is alternatively made of aluminum nitride. However Fabry Perot filter is based on interference properties of the multiple layers and both aluminum oxide and aluminum nitride are common or well-known dielectric materials for forming the layers for the interference filter as taught by **Nelson**, (please see column 5, lines 1-5). It would then have been obvious to one skilled in the art to apply the teachings of Nelson to modify the Fabry Perot filter of Argoltia et al to use aluminum nitride as alternative material for the spacer or intermediate layer for the benefit of allowing different design for the Fabry Perot filter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (9:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

***Audrey Y. Chang, Ph.D.***  
***Primary Examiner***  
***Art Unit 2872***

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/Audrey Y. Chang/  
Primary Examiner, Art Unit 2872